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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,139	10/12/2000	John Jianhua Chen	S63.2-9178	7998

490 7590 08/25/2003

VIDAS, ARRETT & STEINKRAUS, P.A.
6109 BLUE CIRCLE DRIVE
SUITE 2000
MINNETONKA, MN 55343-9185

EXAMINER

NOLAN, SANDRA M

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 08/25/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/689,139

Applicant(s)

CHEN, JOHN JIANHUA

Examiner

Sandra M. Nolan

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 12-19 is/are rejected.
- 7) ☒ Claim(s) 9-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claims

1. Claims 1-19 are pending.

Allowable Subject Matter

2. Claims 9-11 remain objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Rejections Withdrawn

3. The 35 USC 103 rejection of claims 1-8 and 12-19 as unpatentable over Tedeschi et al (US 6,218,016) is withdrawn in view of applicant's arguments on pages 1-3 of the response dated 31 July 2003 (Paper No. 9).

New Rejections

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 12-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Hannam (GB 2115699A).

Hannam teaches a silicone rubber balloon 5 for a catheter (abstract) that is treated with a methoxysilane (page 1, lines 26-40) and dipped in water to hydrolyze the

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methoxy groups (page 1, lines 85). The silane is an aminoalkyl-substituted trimethoxysilane (page 1, lines 56-57).

It is well known in the polymer art that the methoxy groups in a silane will hydrolyze to yield Si-O-Si linkages.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 1-8 and 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hannam in view of Nakagawa et al (US 6,479,584).

Hannam is discussed above. It fails to teach the use of hydrolysable silanes having groups other than amino groups thereon.

Nakagawa teaches molding materials (col. 19, line 58) containing moisture curable (col. 19, lines 41-42) combinations of silane crosslinkers with polymers and/or monomers. Compounds containing alkenyl groups and silyl groups are taught at col.

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14, lines 33-60. Crosslinking through the silyl groups is taught (col. 7, lines 50-60). Hydrolyzable groups of various kind are taught (col. 9, line 47 through col. 10, line 59). The reaction of aminosilane moieties with epoxysilyl moieties is taught (col. 17, lines 25-28). Polymers having terminal crosslinkable silyl groups thereon are taught (col. 13, lines 35-39), with hydrolyzable Y groups thereon (col. 3, lines 4-59). Isocyanate substituted silanes are taught (col. 17, lines 1-4). The resins are elastomers and are usable in medical devices (col. 25, lines 51-63).

The references are analogous because they both deal with the treatment of polymers with silanes to produce medical devices.

It would have been obvious to one having ordinary skill in the art at the time that the invention was made to employ the silane-crosslinkable compositions of Nakagawa to make the silicone rubber balloons of Hannam in order to assure that the silanes of Hannam would react with the silicone polymers of Hannam.

The motivation to employ the Nakagawa compositions to make the balloons of Hannam is found at col. 25, lines 61-62 of Nakagawa, where the use of Nakagawa's compositions to make medical devices is taught.

It is deemed desirable to make catheter balloons from silane-crosslinked silicone materials, such as those suggested by the combination of Hannam and Nakagawa, in order to take advantage of the chemical similarities between the silicone polymer matrices and the silane crosslinkers.

Response to Arguments

9. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Citation as of Interest

10. Terry (US 6,329,488) is cited as of interest as teaching silane copolymer coatings that may be used on polysiloxane rubber catheters (abstract).

Conclusion

Any inquiry concerning this communication should be directed to the Examiner, Sandra M. Nolan, whose telephone number is 703/308-9545. The Examiner can normally be reached on Monday through Thursday, from 6:30 am to 4:00 pm, Eastern Time.

If attempts to reach the Examiner by telephone are unsuccessful, her supervisor, Harold Pyon, can be reached at 703/308-4251. The general fax number for the art unit is 703/305-5436. The fax number for after final communications is 703/872-9310. The receptionist answers 703/308-0661.



S. M. Nolan
Patent Examiner
Technology Center 1700

SMN/smn
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08 August 2003